

AMENDMENTS TO THE CLAIMS

Please amend claims 1, 36, 45, 53, 55, 56, 57 and 58. This listing of claims will replace all prior versions, and listings, of claims in the application.

CLAIMS

Listing of Claims:

1. (Currently Amended) A medical system that can denature a cornea, comprising:
an energy device that can direct energy to a focal point within the cornea at a power level to denature corneal tissue without removing or liquifying corneal tissue; and,
a movement device that moves the focal point of the energy to denature a column of tissue that has ~~to have~~ an essentially uniform cross-sectional area through at least a portion of a stroma.
2. (Original) The medical device of claim 1, wherein said energy device includes a laser.
3. (Original) The medical device of claim 2, wherein said movement device includes a lens and a mechanism for moving a focal point of said lens.
4. (Original) The medical device of claim 3, wherein said mechanism includes a stepper motor.
5. (Original) The medical device of claim 3, wherein said mechanism includes a solenoid.
6. (Original) The medical device of claim 3, wherein said mechanism includes a shaped memory metal.
7. (Original) The medical device of claim 3, wherein said movement device includes a feedback sensor.

8. (Original) The medical device of claim 7, wherein said feedback sensor includes an optical encoder.

9. (Original) The medical device of claim 7, wherein said feedback sensor includes a linear variable differential transformer.

10. (Original) The medical device of claim 7, wherein said feedback sensor includes a hall effect sensor.

11. (Original) The medical device of claim 7, wherein said feedback sensor includes a proximity sensor.

12. (Original) The medical device of claim 1, wherein said energy device is a non-coherent light source.

13. (Original) The medical device of claim 12, wherein said movement device includes a lens and a mechanism for moving a focal point of said lens.

14. (Original) The medical device of claim 13, wherein said mechanism includes a stepper motor.

15. (Original) The medical device of claim 13, wherein said mechanism includes a solenoid.

16. (Original) The medical device of claim 13, wherein said mechanism includes a shaped memory metal.

17. (Original) The medical device of claim 13, wherein said movement device includes a feedback sensor.

18. (Original) The medical device of claim 17, wherein said feedback sensor includes an optical encoder.

19. (Original) The medical device of claim 17, wherein said feedback sensor includes a linear variable differential transformer.

20. (Original) The medical device of claim 17, wherein said feedback sensor includes a hall effect sensor.
21. (Original) The medical device of claim 17, wherein said feedback sensor includes a proximity sensor.
22. (Original) The medical device of claim 1, wherein said energy device includes an ultrasonic transducer.
23. (Original) The medical device of claim 22, wherein said movement device includes a mechanism for moving said ultrasonic transducer.
24. (Original) The medical device of claim 23, wherein said mechanism includes a stepper motor.
25. (Original) The medical device of claim 23, wherein said mechanism includes a solenoid.
26. (Original) The medical device of claim 23, wherein said mechanism includes a shaped memory metal.
27. (Original) The medical device of claim 23, wherein said movement device includes a feedback sensor.
28. (Original) The medical device of claim 27, wherein said feedback sensor includes an optical encoder.
29. (Original) The medical device of claim 27, wherein said feedback sensor includes a linear variable differential transformer.
30. (Original) The medical device of claim 27, wherein said feedback sensor includes a hall effect sensor.
31. (Original) The medical device of claim 27, wherein said feedback sensor includes a proximity sensor.

32. (Previously Presented) A medical device that can denature a cornea, comprising:
a plurality of energy devices that can each direct energy to a different focal point within the cornea at a power level to denature corneal tissue without removing corneal tissue; and
a controller that can select the energy devices so that the focal point of energy varies through the cornea to denature tissue to have an essentially uniform cross-sectional area through at least a portion of a stroma.

33. (Original) The medical device of claim 32, wherein said energy devices include light sources.

34. (Original) The medical device of claim 32, wherein said energy devices include ultrasonic sources.

35. (Canceled)

36. (Currently Amended) A method for denaturing a cornea, comprising:
directing energy onto a focal point within the cornea at a power level to denature corneal tissue without removing or liquifying corneal tissue; and,
varying the focal point of the energy to denature a column of tissue that has ~~to have~~ an essentially uniform cross-sectional area through at least a portion of a stroma.

37. (Original) The method of claim 36, wherein the energy creates a column of denatured tissue within a stroma of the cornea.

38. (Original) The method of claim 36, wherein the energy is light.

39. (Original) The method of claim 36, wherein the energy is ultrasonic.

40. (Previously Presented) The medical system of claim 1, wherein said energy device directs energy to a focal point within a stroma layer of the cornea.

41. (Previously Presented) The medical system of claim 40, wherein said movement device moves the focal point in a circular pattern about the cornea, wherein the circular pattern has a diameter of approximately 6-8 millimeters.

42. (Previously Presented) The medical system of claim 37, wherein the focal points are within a stroma layer of the cornea.

43. (Previously Presented) The medical system of claim 42, wherein said controller moves the focal points in a circular pattern about the cornea, wherein the circular pattern has a diameter of approximately 6-8 millimeters.

44. (Previously Presented) The method of claim 37, wherein a circular pattern of denatured tissue points are created in the cornea, the circular pattern having a diameter of 6-8 millimeters.

45. (Currently Amended) A medical system that can denature a cornea, comprising: an energy device that can deliver energy into a cornea to denature a column of tissue that has to have an essentially uniform cross-sectional area through at least a portion of a stroma.

46. (Previously Presented) The medical device of claim 45, wherein the denatured profile is a column.

47. (Previously Presented) The medical device of claim 45, wherein said energy device includes a laser.

48. (Previously Presented) The medical device of claim 45, wherein said energy device is a non-coherent light source.

49. (Previously Presented) The medical device of claim 45, wherein said energy device includes an ultrasonic transducer.

50. (Previously Presented) The medical system of claim 45, wherein said energy device creates a plurality of denatured spots in a circular pattern about the cornea, wherein the circular pattern has a diameter of approximately 6-8 millimeters.

51. (Previously Presented) The medical system of claim 45, wherein said energy device is an electromagnetic device.

52. (Previously Presented) The medical system of claim 45, wherein said energy device is a microwave device.

53. (Currently Amended) A method for denaturing a cornea, comprising:
delivering energy into a cornea to denature a column of tissue that has ~~to have~~ an essentially uniform cross-sectional area through at least a portion of a stroma.

54. (Previously Presented) The method of claim 53, wherein the denatured profile is a column.

55. (Currently Amended) The method of claim ~~53~~52, wherein the energy is light.

56. (Currently Amended) The method of claim ~~53~~52, wherein the energy is ultrasonic.

57. (Currently Amended) The method of claim ~~53~~52, wherein the energy is electromagnetic.

58. (Currently Amended) The method of claim ~~53~~52, wherein a circular pattern of denatured areas are created in the cornea, the circular pattern having a diameter of 6-8 millimeters.

59. (Previously Presented) The medical system of claim 53, wherein said energy device is a microwave device.